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Seeing is believing: Biological information may reduce mental health stigma amongst physicians

Stephanie Knaak[1], Thomas Ungar[2,3] and Scott Patten[1,4,5]

[1]Opening Minds Anti-Stigma Initiative, Mental Health Commission of Canada, Calgary, AB, Canada
[2]North York General Hospital, Toronto, ON, Canada
[3]Faculty of Medicine, University of Toronto, Toronto, ON, Canada
[4]Department of Community Health Sciences University of Calgary, Calgary, AB, Canada
[5]Department of Psychiatry, Mathison Centre for Mental Health Research & Education, University of Calgary, Calgary, AB, Canada

Corresponding author:
Stephanie Knaak, Opening Minds Anti-Stigma Initiative, Mental Health Commission of Canada, 110 Quarry Park Blvd, Suite 320, Calgary, AB, T2C 3G3, Canada.
Email: sknaak@mentalhealthcommission.ca

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In 2013, we embarked on a conversation in *Australian & New Zealand Journal of Psychiatry* (*ANZJP*) arguing that presenting physicians with knowledge of the biologic components of mental illness to enhance organic legitimacy might be an effective strategy for combating stigma among this professional group (Thomas, 2013; Ungar and Knaak, 2013a, 2013b). The theoretical rationale for why this might be the case among physician audiences, even when it seems not to be effective for the general public, drew on the paradigm of mind–body dualism and how this structures the way physicians think about illnesses and their treatability. Specifically, we argued that because physicians are in the specific business of fixing, treating and otherwise controlling biologic disorder, it is both logical and probable that they apply a different set of cognitive interpretations and/or judgements to a medicalized framing of mental illness than does the general public (Ungar and Knaak, 2013b).

We now have some empirical evidence that appears to support our theory: namely, pre- and post-stigma score ratings from an evaluation of an online continuing medical education (CME) course on mental illness stigma offered to physicians in Canada. The programme includes a number of elements shown to be important for anti-stigma programming for healthcare professionals (see Knaak et al., 2014), such as personal testimonials from persons with lived experience of a mental illness currently in recovery, skills building and transformative learning/myth-busting through education and reflection exercises. The programme also includes a unit on the biologic correlations associated with mental illness, specifically major depression. Positron emission tomography images of functional changes, magnetic resonance imaging of hippocampal volume loss and evidence on associated inflammation and genetic biologic differences are included. Physicians receive education credits upon completion of the course. Enrolment in the course is voluntary. More information about this programme can be found on the programme's host website at www.mdcme.ca/courseinfo.asp?id=143.

The measure used to evaluate the stigma reduction impact of the programme is the Opening Minds Scale for Health Care Providers (OMS-HC), a 15-item validated scale that measures healthcare providers' attitudes and behavioural intentions towards people with a mental illness (Modgill et al., 2014). To complete the scale, participants are asked the extent to which they agree or disagree with each item. Items are rated on a 5-point scale: *strongly agree*, *agree*, *neither agree nor disagree*, *disagree* or *strongly disagree*. To create a total scale score for the OMS-HC, all 15 items are summed for each participant. Total scores can range from 15 to 75, with lower scores indicating less stigma. Participants complete the scale at two time points: at the beginning of the module and again at the completion of the module.

We analysed complete pre–post scale data from the 67 participants who took the course between June and December 2014. Cronbach's alphas for the scale were 0.83 at pre-test and 0.93 at post-test, indicating good internal consistency for the OMS-HC at both time points. Paired *t*-tests were used to analyse changes in OMS-HC scale scores. Total average scores improved from 33.98 (standard deviation [SD] = 8.04) at baseline to 27.57 (SD = 8.02) at post-test, indicating an 18.9% relative improvement in score and a mean difference of 6.42 (4.94–7.89). This difference was found to be statistically significant, $t(66) = 8.69$, $p < 0.001$. Significant score improvements were also observed on the three dimensions of stigma captured by the OMS-HC: negative attitudes – pre-test $M = 2.13$,

SD = 0.79; post-test $M = 1.77$, SD = 0.63; $t(66) = 4.42$, $p < 0.001$; preference for social distance – pre-test $M = 1.98$, SD = 0.63; post-test $M = 1.69$, SD = 0.60; $t(66) = 5.37$, $p < 0.001$; and willingness to disclose/seek help – pre-test $M = 2.80$, SD = 0.75; post-test $M = 2.13$, SD = 0.64; $t(66) = 7.56$, $p < 0.001$.

We also have comparative data from six other anti-stigma programmes delivered to physician audiences in Canada using the same metric. While these programmes shared many of the same kinds of ingredients as the CME programme – such as teaching relevant skills, including personal stories from persons with lived experience of a mental illness, emphasizing recovery and providing education to correct false beliefs and raise awareness – none included a similar biological component. While analysis of pre–post scale data from these programmes showed them also to be generally effective (at the $p < 0.05$ level), the CME programme emerged as one of the best-performing (relative score improvements for these programmes: 1.8%, 3.3%, 3.3%, 5.5%, 6.2%, 10.4%; mean difference for these programmes: 0.60, 1.14, 1.14, 1.64, 2.05, 3.75).

Although controlled studies are required to confirm our hypothesis and other explanations are certainly possible, we suggest that the positive results from the evaluation of the online CME programme provide initial empirical support as to its effectiveness at improving attitudes and behavioural intentions among physicians towards persons with a mental illness. We suggest that these results also provide preliminary support to our hypothesis that including biologic conceptions of mental illness to enhance organic legitimacy may be a useful tool for reducing stigma among physicians. A randomized control study to test this hypothesis more directly would be a fruitful endeavour for future research.

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

Ethics

The programme evaluation was approved by the Health Research Ethics Authority, Newfoundland and Labrador. Participant evaluation data were collected by Professional Development & Conferencing Services, Faculty of Medicine, Memorial University. Data were provided to the Mental Health Commission of Canada with the consent of participants and were coded with all identifying information removed.

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See Debate by by Ungar and Knaak, 47(7): 611–612, Letter by Thomas et al., 47(10): 973 and Letter by Ungar and Knaak, 47(11): 1088.

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Commentary on: Incidence of eating disorders in Danish psychiatric secondary healthcare 1970–2008

Jonathan Mond

Department of Psychology, Macquarie University, Sydney, NSW, Australia

Corresponding author:
Jonathan Mond, Macquarie University, C3A513, Sydney, NSW 2129, Australia.
Email: jonathan.mond@mq.edu.au

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In this issue of the Journal, Gammelmark et al. (2015) report findings from a case-register study of eating disorders (EDs) incidence in Denmark, expanding on earlier work using the same method. Participants were Danish citizens with a first time, primary ED diagnosis receiving hospital-based psychiatric treatment between 1 January 1970 and 31 December 2008, as identified in the Danish Central Psychiatric Research Register. The research is notable for at least two reasons. First, data are captured for an entire population over some four decades, up to and including the present. Second, for the period from 1995 to 2008, data for both inpatient and outpatient treatment are available.

Several findings of interest emerged. First, the (age-standardised) incidence of ED receiving treatment increased significantly during the four decades covered by the study. Second, the steepest increase occurred in females aged 15–19 years, this also being the subgroup for which incidence was highest, during the mid–late 1990s. Third, for the duration of the period of observation, females accounted for the vast majority of individuals with ED receiving treatment. Fourth, outpatient treatment accounted for the majority of ED cases throughout the study period with this proportion increasing somewhat in recent years. Finally, cases of anorexia nervosa (AN) constituted approximately three-quarters (77%) of ED cases receiving inpatient treatment throughout the study